

The Invasion of dense-flowered cordgrass (*Spartina densiflora*) in Humboldt Bay

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A photograph of a coastal landscape. In the foreground, there is a dense field of tall, golden-brown grasses, likely a coastal species. In the background, there is a body of water, possibly a bay or a river, with a shoreline visible in the distance. The sky is overcast.

Introduced to Humboldt Bay from Chile ca. 1850

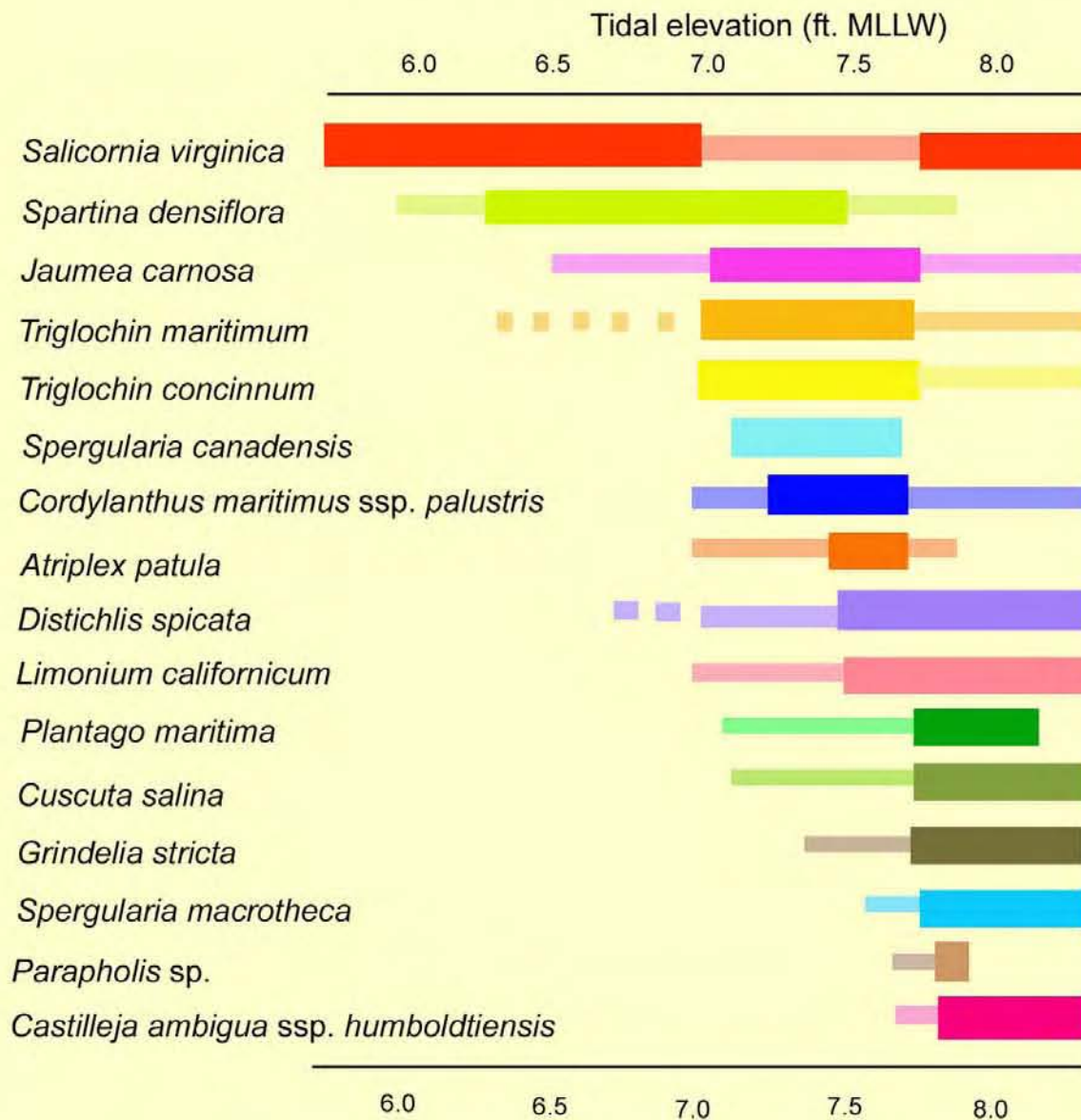
Mistaken for *S. foliosa* until 1980s

Invaded worldwide (NA, Europe, Morocco)

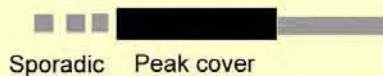
Wide latitude of habitats



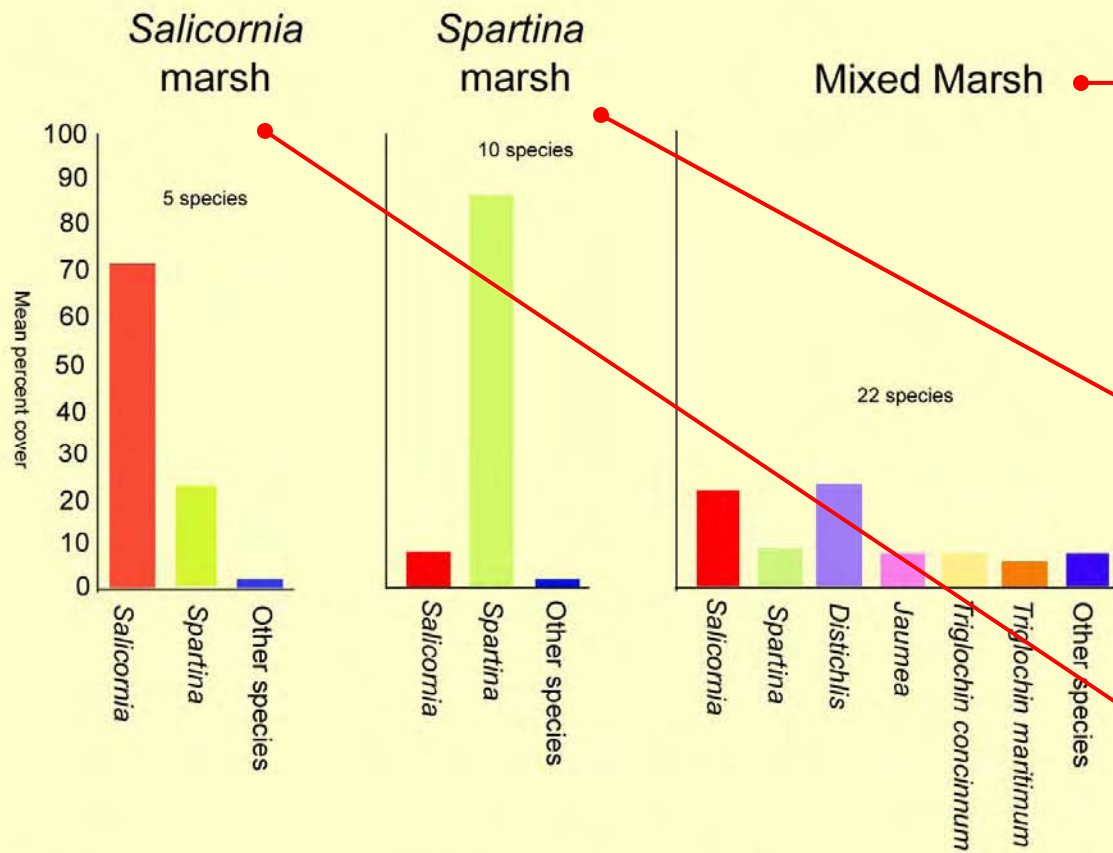
What did it displace?



Distribution of salt marsh plants, Humboldt Bay (after Eicher 1987)

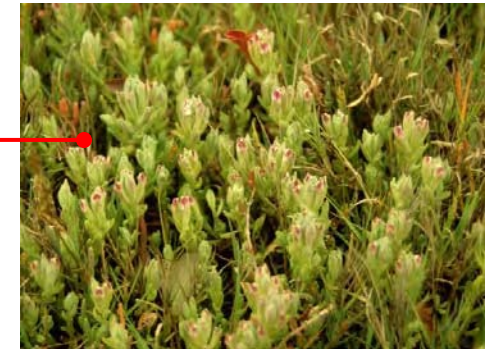


Salt marsh vegetation types



Cover of dominant species in three salt marsh types (after Eicher 1987)

High elevation



Mid-elevation

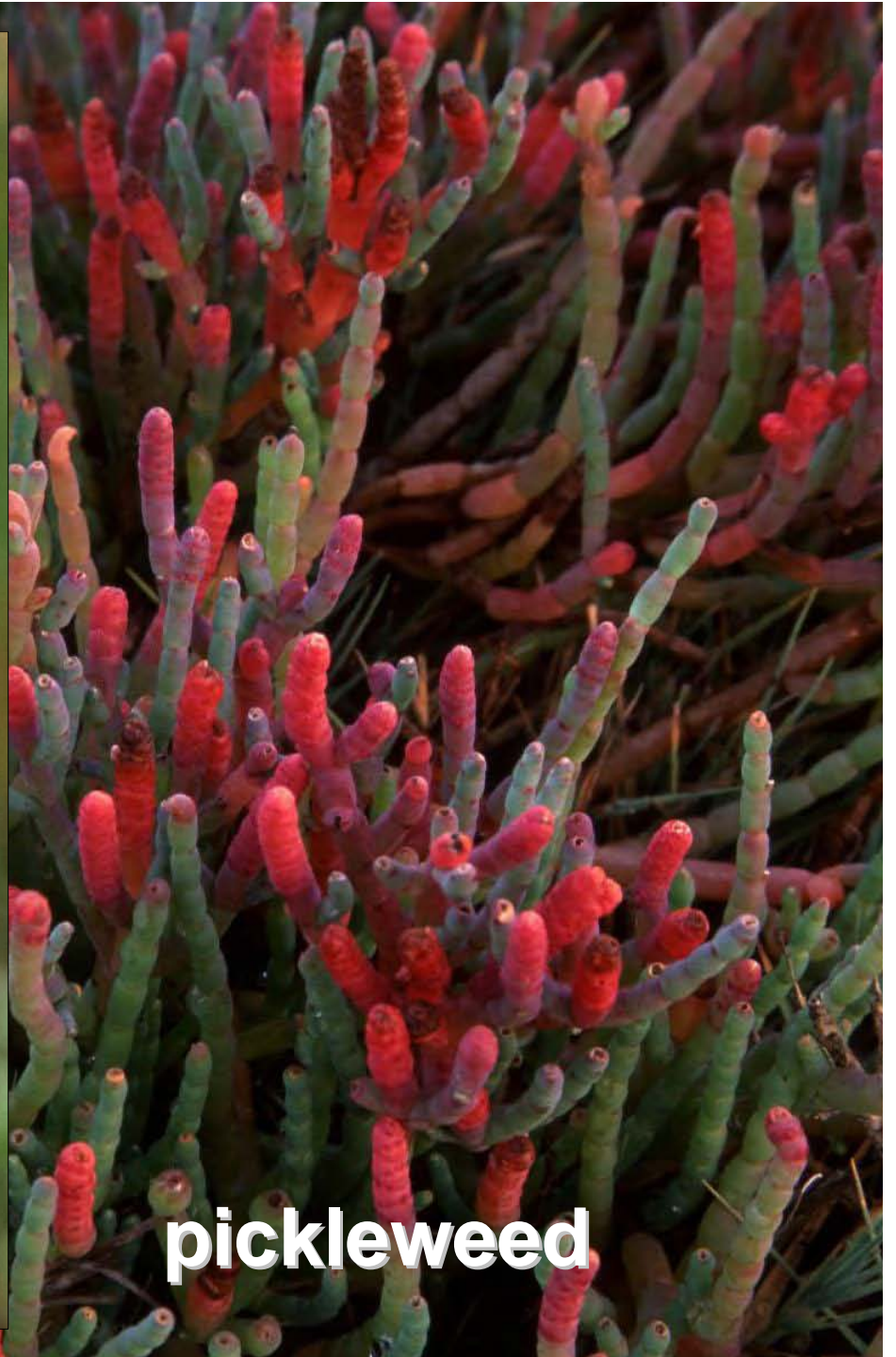


Low elevation





***Salicornia* Marsh**



pickleweed



***Spartina* Marsh**



Mixed Marsh



salt grass



jaumea



sea milkwort



**salt marsh
plantain**



**salt marsh
dodder**



**salt marsh
rosemary**

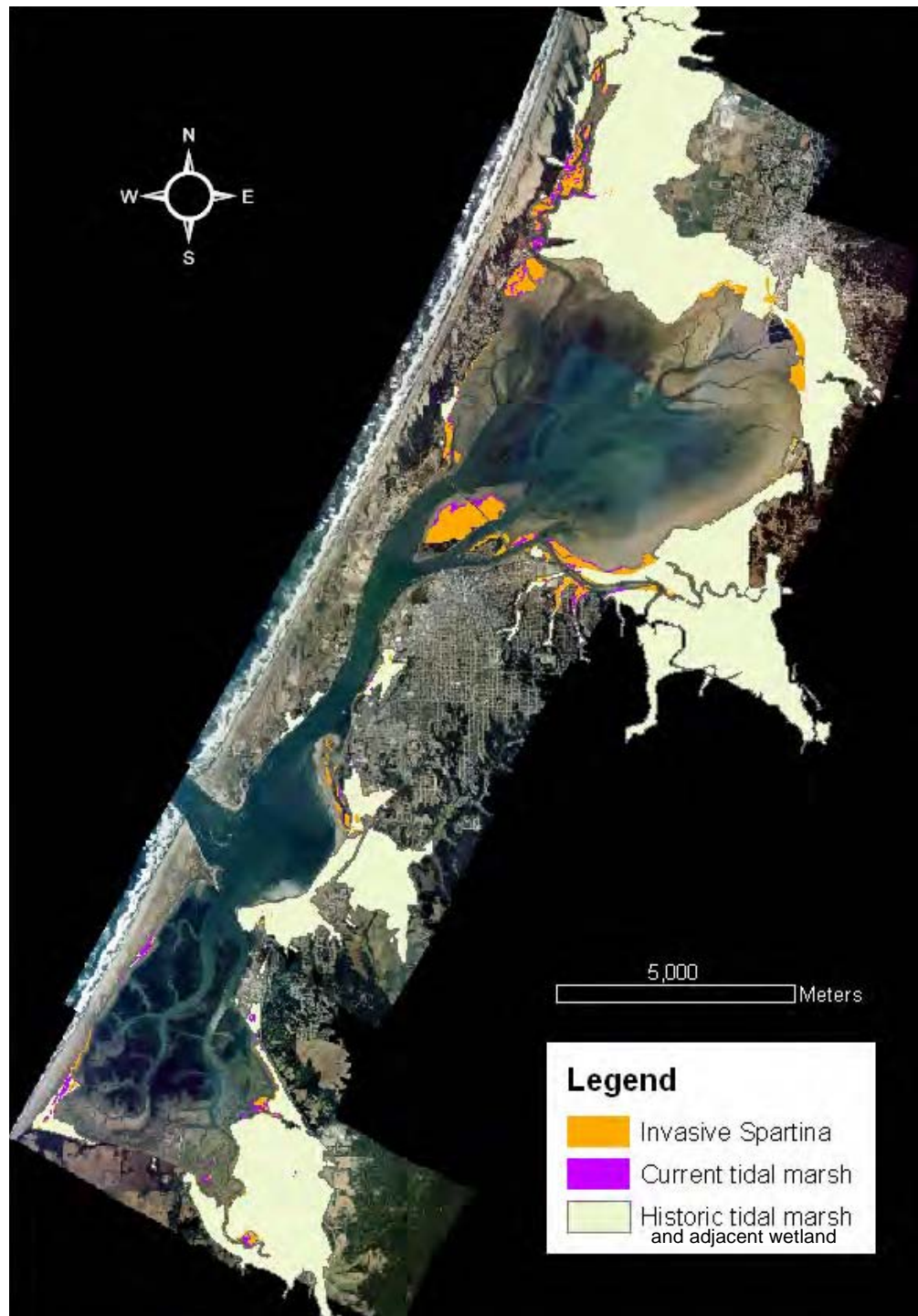




**Humboldt bay
owl's clover**







Static Invasion?

Kittlelson and Boyd 1997:

- Germination probably contributes little to maintenance of *S. densiflora* in undisturbed marshes...establishment?
- Seedling recruitment on bare areas (often from wrack deposition) during periods of high freshwater influence
- Expanding primarily in disturbed (wrack) and restored areas









Competitive advantages



2,000 viable seeds per
plant (Kittleson and
Boyd 1997)

Higher seed production
and viability than other
Spartina spp.

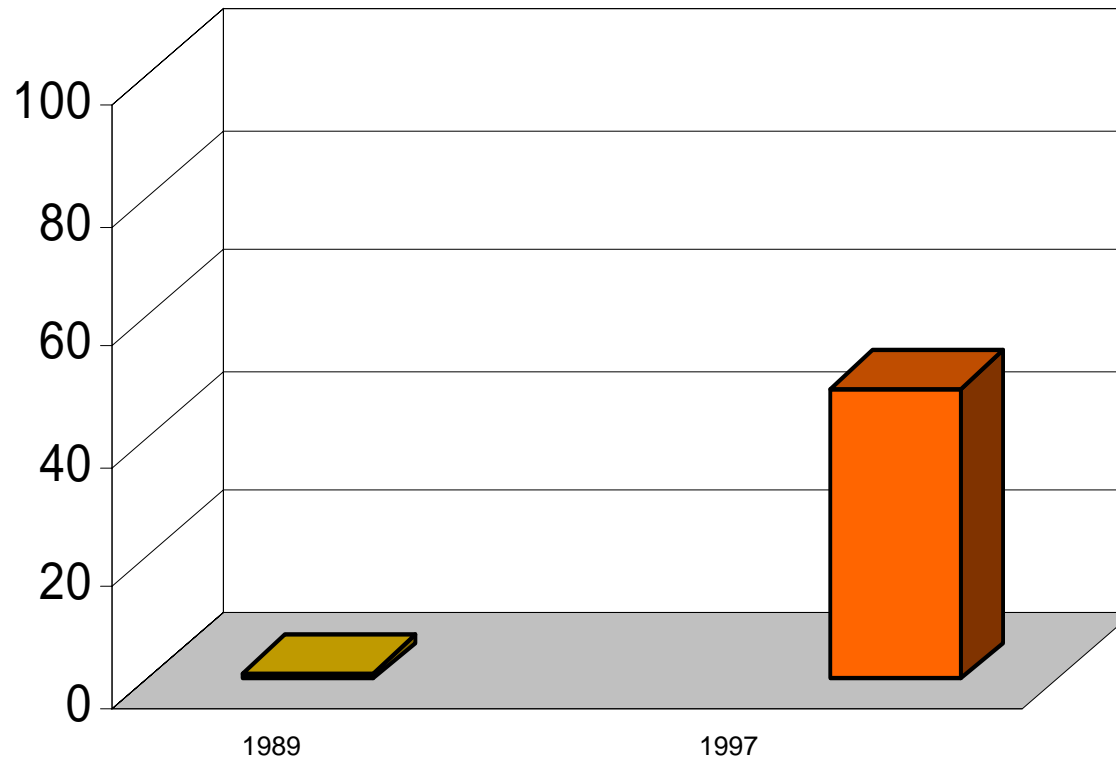








Frequency of
Spartina densiflora
at Mad River Slough



INVASION NOT STATIC, STILL INVADING
HIGH MARSHES AND OTHER HABITATS



1984



2001



2001



2006



2006



2008



1985



2002



1985



2002



WHERE IS IT GOING?







A photograph of a coastal landscape. The foreground is dominated by a dense field of tall, golden-brown grasses. In the middle ground, a small, shallow, muddy stream or tidal channel winds through the grass. To the left and right of the stream, there are clumps of green shrubs and some taller, thin plants with light-colored seed heads. In the background, a body of water is visible under a pale, overcast sky. The overall scene is a natural, undisturbed coastal environment.

Mad River Estuary

